

REMARKS

Claims 45, 46, 49-53, 56-59, 64-68, and 70-74 are pending in this application. Claims 45, 46, 58-59, 72, and 73-74 are rejected under 35 U.S.C. § 103(a) for obviousness over Relyveld (U.S. Patent No. 4,016,252; hereinafter "Relyveld") in combination with Gerhart et al. (U.S. Patent No. 5,085,861; hereinafter "Gerhart") and Constantz et al. (U.S. Patent No. 5,782,971; hereinafter "Constantz"). Claims 49-53, 56-57, 64-68, and 70-71 are rejected under 35 U.S.C. § 103(a) for obviousness over Relyveld in combination with Gerhart, Constantz, and Classen (U.S. Patent No. 5,723,283; hereinafter "Classen"). By this reply, Applicants cancel claims 49-53, 56, 57, 64-68, 70-72, and 74, amend claims 45, 46, 58, and 59, add new claims 75-77, and address each of the Examiner's rejections.

Support for the Amendment

Support for the amendment to claims 45, 76, and 77 is found in the specification at, e.g., page 8, lines 8-11, and in the specification of U.S. Patent No. 6,541,037 (the "'037 Patent") at col. 14, lines 44-47, which is incorporated into the present application by reference.¹ Support for claim 46 is found in the specification of the '037 Patent at, e.g., col. 20, lines 40-42. Support for claims 58 and 75 is found in the specification of the '037 Patent at, e.g., col. 12, line 61, through col. 13, line 5. Support for claims 59 and 73 is found in the '037 Patent specification at, e.g., col. 22, lines 26-41. No new matter is added by the amendment.

¹ The present application claims priority to the '037 Patent and incorporates the specification of the '037 patent by reference ("This application is a continuation-in-part application of co-pending U.S.S.N. 08/729,342 filed October 16, 1997 entitled "Delivery Vehicle"..., which...[is] hereby incorporated in...[its] entirety by reference.").

Entitlement to Claim Priority to the Filing Date of an Earlier Parent Application

The present application is entitled to claim priority to the filing date of the '037 Patent and, by the present amendment to the specification and to claims 45, 46, 58, 59, 73, and 75-77, Applicants have perfected this claim to priority.

The present application was filed on September 15, 1998, and included the following priority claim:

This application is a continuation-in-part application of co-pending U.S.S.N. 08/729,342 filed October 16, 1997 entitled "Delivery Vehicle", which is a continuation-in-part application of co-pending application U.S.S.N. 08/650,764 filed May 20, 1996 entitled "Novel Bone Substitution Material and a Method of its Manufacture", which is a continuation-in-part application of issued U.S. Patent No. 5,676,976 entitled "Synthesis of Reactive Amorphous Calcium Phosphates", all of which are hereby incorporated in their entirety by reference.

(Specification, as filed, page 1, lines 7-13.) In the Office Action dated December 16, 1999 (page 3), the Office states

Applicant has not complied with one or more conditions for receiving the benefit of an earlier filing date under 35 U.S.C. 120...[because] the disclosure of the invention in the parent application and in the continuing application must be sufficient to comply with the requirements of the first paragraph of 35 U.S.C. 112....In the instant case, the U.S. application Serial No. 08/729,342, filed October 16, 1996,...fail[s] to teach [the limitations of the pending claims]...Although some of the broad claims may have support to earlier filed priority applications, the effective priority date used for examination of the instant invention as a whole...is September 15, 1998.

Present claims 45, 46, 58, 59, 73, and 75-77 are fully supported by the specification of the '037 Patent. Thus, Applicants have complied with all of the conditions for receiving the benefit of an earlier filing date under 35 U.S.C. 120. Applicants respectfully request acknowledgement that the priority date of the present application is October 16, 1996.

Rejections under 35 U.S.C. § 103

Relyveld, Gerhart, and Constantz

Claims 45, 46, 58-59, 72, and 73-74 stand rejected under 35 U.S.C. § 103(a) for obviousness over the combination of Relyveld, Gerhart, and Constantz. As is discussed above, the present application is now entitled to claim benefit to the filing date of October 16, 1996. Thus, Constantz, which has a filing date of March 19, 1997, is no longer prior art to the present application. Constantz also claims priority as a continuation-in-part to U.S. Serial No. 07/963,481, now U.S. Patent No. 5,962,028, which was filed on October 16, 1992, and as a continuation-in-part to U.S. Serial No. 07/722,880, abandoned, which was filed on June 28, 1991. Neither U.S. Serial No. 07/963,481 nor U.S. Serial No. 07/722,880 describes amorphous calcium phosphate- or poorly crystalline apatitic calcium phosphate-containing compositions, as is recited in present independent claims 45 and 59, and claims dependent therefrom. Accordingly, Constantz should be withdrawn as a cited publication in the present rejection.

In the absence of Constantz, Gerhart, either singly or in combination with Relyveld, fails to teach or suggest each and every limitation of present claims 45, 46, 58, 59, 73, and 75-77. In particular, Gerhart describes a bone cement that is cured in an exothermic reaction, stating:

The present invention is directed to a biodegradable cement composition adapted for use in the surgical repair of living bone and for the controlled-release delivery of pharmaceutical agents. The composition comprises a particulate biocompatible calcium phosphate ceramic and a resorbable calcium salt dispersed in a cross-linked biodegradable polyester matrix.

The cross-linking reaction employed to "cure" the present composites is only mildly exothermic compared to, for example, PMMA polymerization.

(Gerhart, col. 4, lines 19-25, and col. 8, lines 30-32; emphasis added.)

In contrast, the delivery composition of present claims 45, 46, 58, 59, 73, and 75-77 is formulated as an injectable paste that hardens in an *endothermic* reaction. Thus, Gerhart fails to teach or suggest each and every limitation of present claims 45, 46, 58, 59, 73, and 75-77.

Relyveld fails to cure the deficiencies of Gerhart. Relyveld discloses a calcium phosphate gel that should be administered as a fine, particulate *suspension* (see, e.g., col. 2, lines 2-9). Relyveld fails to teach or suggest a delivery composition formulated as an injectable paste that hardens in an endothermic reaction. Thus, Relyveld, whether considered singly or in combination with Gerhart, fails to teach or suggest a composition having each and every limitation of present claims 45, 46, 58, 59, 73, and 75-77.

The rejection of claims 45, 46, 58-59, 72, and 73-74 under 35 U.S.C. § 103(a) for obviousness over the combination of Relyveld, Gerhart, and Constantz should be withdrawn and should not be applied to present claims 45, 46, 58, 59, 73, and 75-77.

Relyveld, Gerhart, Constantz, and Classen

The Office rejects claims 49-53, 56-57, 64-68, and 70-71 under 35 U.S.C. § 103(a) for obviousness over the combination of Relyveld, Gerhart, Constantz, and Classen. Claims 49-53, 56-57, 64-68, and 70-71 are cancelled. This rejection can be withdrawn.

CONCLUSION


In view of the above remarks, Applicants respectfully submit that the pending claims are in condition for allowance, and a notice to that effect is respectfully requested.

If there are any other charges or any credits, please apply them to Deposit Account No. 03-2095.

Respectfully submitted,

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